



EXPEDITED PROCEDURE - EXAMINING GROUP 2859

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By [Signature]

Attorney Docket No. 010517-0037000US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

SCHMIDT et al.

Application No.: 08/836,369

Filed: October 20, 1997

For: TEMPERATURE-MEASUREMENT
INSTRUMENT WITH DIFFRACTIVE
OPTICS

BOX AF

Examiner: A. Hirshfield
Art Unit: 2859

NOTICE OF APPEAL

EXPEDITED PROCEDURE -
EXAMINING GROUP 29859

Assistant Commissioner for Patents and Trademarks
Washington, D.C. 20231

Sir:

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Applicants hereby appeal to the Board of Appeals and Interferences from the Examiner's decision dated January 19, 2000, which rejected claims 1, 3, and 82. A petition to extend time to respond for three months is enclosed..

Please charge the filing fee of \$300.00 for this Appeal, any additional fees due in connection with this paper, or credit any overpayment, to Deposit Account No. 20-1430 of the undersigned. This notice is submitted in triplicate.

Respectfully submitted,

[Signature]

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the laser optics to form a continuous circle outlining only the periphery of the energy zone. Fig. 2 depicts a two-component laser for generating separate beams outlining only the periphery of the energy zone. Fig. 10 depicts a complicated structure including a bundle of fibers for generating a plurality of spots outlining only the periphery of the energy zone. Only Figs. 2 and 10 depict structures for splitting a laser beam into components.

2. German patent document 32 13 955

The German document discloses a laser sighting arrangement utilizing a single laser and a beam-splitter including a beam-splitter 8 in the form of a half-silvered mirror or prism for splitting a single beam into two components. Deflecting mirrors 7 and 7' align the two beams to define the measurement spot at different distances.

3. British patent document 2 203 537

The British document discloses a sighting arrangement having a visible light source which emits a cone of light. A masking element is placed in front of the light source to block out light which would be projected onto the energy zone. The image of the masking spot coincides with the energy zone so that the energy zone is surrounded by a ring of light.

The Examiner's Reasoning

With regard to the first rejection, the examiner states that in Hollander, at figs. 5 and 10, the laser device includes a means for simultaneously emitting a plurality of more than two laser beams towards the surface to outline the energy zone. Also, it is stated that, at col. 6, lines 49-51, Hollander states that individual lasers or laser splitting devices can be used to split a single laser beam. The examiner further states that Hollander does not teach a sighting arrangement having a diffractive optical system, but concludes that replacing the beam-splitter of Hollander with a diffractive optical system would have been obvious because such systems are equivalent and alternative devices for creating an image from a beam of light.

With regard to the second rejection, the examiner states that it would have been obvious to modify the system disclosed in the German document by replacing the beam-splitter thereof with a system that creates a circle to outline the energy spot, because the British document teaches that a circular outline of the energy zone provides valuable information. It is

also stated that to utilize a diffractive optical system to generate the circular outline is obvious because all beam-splitters are alternative and equivalent devices for creating a plurality of beams from a single beam so that any beam-splitter could function in the device disclosed by the German document.

ARGUMENT:

1. Summary of the Argument

35 U.S.C. §103(a) states that a patent may not be obtained if "differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious...to a person of ordinary skill in the art". The subject matter claimed in the appealed claims is completely different, in structure and function, than the subject matter disclosed by the cited reference. There is no suggestion or teaching in the cited reference that would suggest or make obvious the claimed subject matter to a person of ordinary skill in the art.

2. The first Rejection

Differences Between the Subject Matter Sought to be Patented and the Cited Reference

As admitted by the examiner, there is no teaching in Hollander of a sighting arrangement for a radiometer having a diffractive optical system. However, the examiner states, without support, that the claimed diffractive element and the beam splitter of Hollander are equivalent and alternative devices for creating an image from a beam of light.

In the quoted language of Hollander it is stated in the summary of the invention that "The two or more laser beams could be derived from a dedicated laser to each beam or by means of beam splitters. This can be accomplished by mirrors, optics and fiber optics." Further, as stated above, the only disclosure in Hollander of providing two or more laser beams is in Fig. 5, where a laser has two components, or Fig. 10, where a bundle of optical fibers is used to generate multiple components from a single laser beam.

The examiner has used the applicant's teaching that a diffractive optical system can be utilized to produce a diffraction pattern to outline the energy zone as the basis for the

position that the diffractive optical system is an equivalent structure to the beam splitter disclosed in Hollander. However, use of the applicant's own disclosure as a roadmap to combine prior art references is forbidden. *Union Carbide Corp. v. American Can Co.*, 220 USPQ 584 (CAFC 1984).

Since there is no suggestion in the references of utilizing a diffractive optical system to generate a light pattern to define the energy zone, it is believed that the examiner is applying an obvious-to-try standard. The CAFC has postulated three situations that seem to lead to the conclusion that it would be obvious to try:

1) to vary all parameters or try each of numerous possible choices until one possibility arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful; 2) to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it; and 3) where the reference contained detailed enabling methodology for practicing the claimed invention, a suggestion to modify the prior art to practice the claimed invention, and evidence suggesting that it would be successful.

The first two situations result in nonobviousness, while the third does not. *In re O'Farrell*, 7 USPQ2d 1673 (CAFC 1988).

The present facts are similar to situation 2). Hollander suggests that two or more beams can be derived utilizing a beam splitter and discloses a beam splitter having discrete structures for forming each beam, in Fig. 5 the arms of the laser splitter and in Fig. 10 the multiple optical fibers. Here, the inventors explored a new technology that seemed to be a promising field of experimentation not suggested or taught by the reference.

3. The Second Rejection

Differences Between the Subject Matter Sought to be Patented and the Cited Reference

As in the first rejection, the examiner admits there is no teaching in the references of a sighting arrangement for a radiometer having a diffractive optical system. However, the examiner states, without support, that the claimed diffractive element and the beam splitter of Hollander are equivalent and alternative devices for creating an image from a beam of light.

The German patent document discloses a beam splitter formed of mirrors that generates two beams to outline the energy spot. There is no teaching of how the system could be modified to generate multiple beams and no suggestion of using a diffractive optical system to generate a light pattern to outline the energy zone. The British reference is cited to show the advantage of outlining the energy zone.

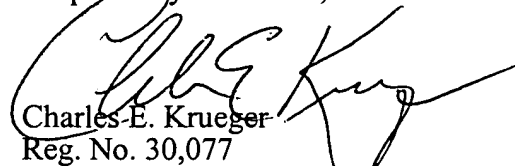
The argument set forth for the first rejection is incorporated by reference here. Again, the technology of the claimed invention is not suggested or taught by the references.

CONCLUSION:

None of the references disclose the features of the pending claims. The examiner has used the applicant's own disclosure as a guide to conclude that a diffractive optical system is equivalent to the beam splitter disclosed in Hollander.

In view of the above, it is respectfully asserted that the pending claims are patentable.

Respectfully submitted,


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Attachment: Appendix – Pending Claims

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APPENDIX

1. Device for temperature measurement comprising:
 - a) a detector for receiving heat radiation emanating from a measurement spot on an object of measurement,
 - b) an optical system for imaging the heat radiation emanating from the measurement spot onto the detector
 - c) and a sighting arrangement having a laser aligned to illuminate a diffractive optical system to produce a diffraction pattern in the form of light intensity distribution for identifying and outlining the position and size of the measurement spot on the object of measurement by means of visible light.

3. Device as claimed in claim 1, wherein the diffractive optical system is formed by a holographic element.

82. The device of claim 1 where said diffractive optical system generates a circular arrangement of more that two beams to outline and identify the energy zone.

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